CELESTRON®

NEWTONIAN
TELESCOPES
C6
INSTRUCTIONS

Eyepiece extension tube
Finder adjusting screws
Finder holder bracket screw
Tube mounting rings
Dovetail bracket
For guide scope attachment (optional)
Dec. Slow motion
Latitude locking lever
Azimuth adjusting knobs

Celestron C6 Newtonian Telescope

6-inch diameter 150mm/750mm focal length (f/5)

Unpacking Your C6 Telescope

After cutting away any strapping present, and carefully pulling open the cardboard boxes, you should remove all components of the telescope and arrange them neatly in an uncluttered, open area, such as a garage or basement floor, or a back patio. Doing so will aid you in easier, faster assembly of the telescope. Remove items from foam packing, and remove any tape, rubber bands or other material used to retain parts during shipping.

Assembly of the C6

First, adjust the length of the three tripod legs such that they are all equal. It is probably best to extend them to full length; later, you can adjust the height of the legs to suit your needs, particularly if you are going to use a stool or small chair, as opposed to standing. Lay the equatorial head (part B in Figure 1) on the floor. Taking one tripod leg, place the mounting bolt (situated crossways in the top end of the leg) into the clamp casting on the equatorial head. Tighten the nut and bolt just until it's snug. Repeat this attachment procedure with a second leg.

You may then raise the equatorial head up such that it rests on the two attached legs; then you can simply rest the third clamp casting on the remaining leg, and again tighten the mounting bolt.

With the tripod now erected, take the triangular accessory tray (part D in Figure 1) and attach it to the mounting brackets located on the inside of each leg, using the wing-nuts provided (later models use knobs with threaded holes).

Now is a good time to mount the two counterweights (parts E and F in Figure 1). Simply spin them onto the threaded portion of the declination axis (threaded rod on equatorial head). For now, it is best to leave them at the low end of the threaded rod. Next, attach the two slow-motion controls (chromed rods with knurled knobs) to the two slow-motion shafts on the equatorial head (see Figure 1). The longer of the two shafts is for the declination control, situated just below the saddle.

You are now ready to complete assembly of your C6 by preparing the tube assembly and attaching it to the equatorial mount. To start, it will be much easier if you remove the tube rings from the tube and attach them to the saddle on the equatorial head; then you can easily rest the tube in the tube rings and refasten the rings. All that remains is to attach the finderscope. With the finder mounted in its bracket, attach the bracket to the tube of the main telescope by sliding the base of the bracket into the clamp which is bolted on towards the front end of the tube. Your C6 is now essentially a complete instrument, aside from a few desirable accessories. You are now ready to "fine tune" the C6 to perform at its very best.

Adjusting Your Telescope

First of all, the mounting should be carefully checked and adjusted. If the mounting isn't rigid and stable, it won't matter how well the optics perform. Start by getting the tripod level after you have chosen the location you wish to use for the evening's observing. While

keeping an eye on the bubble level, located on the head casting, slightly loosen the retaining knobs on the bottom of the tripod tray, and move the legs out as far as they will go. Then, adjust the length of the legs until the bubble in the level is centered.

The next important aspect of adjusting the instrument is to balance it properly. First, adjust the motion of the telescope on its right ascension axis by shifting the position of the two large counterweights. It is close to being balanced when the telescope no longer drifts on its right ascension axis when you let go of the tube. It is precisely balanced when you can give it a gentle push in either direction in right ascension, and it instantly stops of its own accord. To balance the motion of the instrument on its declination axis, loosen the tube rings and shift the position of the tube in the end-to-end direction, until the motion in declination is balanced as described before. Be sure the focuser, which holds your eyepieces, is located in a convenient position before tightening the tube rings. (NOTE: Refer to Figure 1 if you are not sure which axis is which).

Now you must adjust the finderscope. The goal here is to adjust the setscrews on the finder's bracket such that a test object (choose a bright star) centered in the field of the 26mm eyepiece is also centered on the crosshairs in the finderscope. For greater accuracy, if you own higher-powered eyepieces, you can repeat this centering adjustment while progressing to higher magnifications. Having completed this adjustment, you are

now ready to use your telescope. (Refer to the generic sheet on Polar Alignment and Use of Setting Circles).

Disassembling and Transporting

Basically, the progressive steps of disassembling the telescope should be the reverse of the assembly process. The slow-motion control knobs and the counterweights should first be removed and replaced in the foam packing. The tripod legs are then removed from the equatorial head, and shortened to minimum length. The head should then be placed in the proper recess in the foam packing to provide as much protection as possible.

The boxes and the foam packing the telescope comes in are suitable to keep the instrument stored in. However, the more ambitious user may wish to consider constructing an inexpensive plywood carrying case, at least for the tube assembly and legs, if not the entire telescope. This is more than a casual suggestion for those who anticipate using the instrument away from home frequently, carrying it about to various locations in the back of a car, van, or other vehicle. In any case, unless the telescope is transported in its original packing, care must be taken to protect it from rolling and sliding around in your vehicle, which may lead to damage, or, at the least, discollimate the optical system. You may consider resting the components of the telescope in thick blankets, sleeping bags, etc. to avoid such damage.

Cleaning, Caring for, and Storage of Your Telescope

As far as storage is concerned, regardless of what you choose to keep your telescope in, it is best to keep it away from moisture of any kind. Keep the

telescope covered with its dust cap, and preferably keep the tube assembly and equatorial head wrapped in plastic, such as heavy-duty plastic trash sacks. Moisture is the number one enemy of a telescope's optical and mechanical parts. It is constructed in a way that much of the elements of nature can't immediately harm the instrument; however, without your conscientious efforts to keep it protected from the dangers described above, it will eventually sustain damage that will directly affect its usability and performance.

WARNING!!! NEVER attempt to view the sun with your telesopc, or even point the instrument at the sun, UNLESS it is equipped with the solar filter intended for use with your telescope model (refer to the accessory catalog). Celestron solar filters are among the safest, highest quality units available.

OBSERVATION OF THE SUN WITHOUT A PROPER FILTER WILL RESULT IN INSTANT AND PERMANENT EYE DAMAGE (BLINDNESS). Even just pointing the telescope at the sun can ruin both the main instrument and the finderscope. (The finderscope's dustcaps should be left on during solar observation; the sun can be located by looking at the shadows of the main tube and the finderscope. To reemphasize, if you wish to observe the sun, USE THE PROPER FILTER!

Repair and Servicing of Your Instrument

The utmost care is taken in the assembly, packaging and shipment of your telescope. However, although remote, there is always the possibility of your telescope being in less-than-perfect condition. There will also be instruments here and there

which will suffer damage from various types of wear and tear in everyday use. Whatever the reason, your dealer should be contacted immediately concerning any damage, particularly if the telescope is damaged upon first inspection when unpacking it.

Routine problems, minor damage and basic servicing can ordinarily be taken care of quite efficiently by a Celestron dealer. However, more serious problems and damage will probably require that the telescope be sent to the Celestron Factory. It is best to contact the factory before doing so, though. One reason is, if possible, you can be advised as to whether you can send only the part or subassembly in question, instead of having to ship the entire instrument. Celestron's address and important phone numbers are listed at the end of this manual.

IMPORTANT!!! BE SURE TO RETURN YOUR COMPLETED REGISTRATION CARD AS SOON AS POSSIBLE! NO INSTRUMENT IN ANY CASE CAN BE COVERED BY THE CELESTRON WARRANTY IF YOU DO NOT RETURN THE REGISTRATION CARD!

Accessories

THE PULSE MOTOR DRIVE

This small but effective unit allows your telescope to precisely track a star or other object and keep the object in the field of view, without having to move the telescope manually. This is accomplished by the motion of the small motor compensating for the apparent movement of the stars across the sky, which is due to the earth's rotation.

To mount the motor drive to the equatorial head, simply place the

bracket attached to the motor drive against the side of the head, with the holes of the bracket aligned with the locating holes in the head casting (see diagram).

Before inserting the mounting bolts to secure the motor to the head, you must make sure the drive shaft on the motor is fitted over the right ascension shaft protruding from the head. Then tighten both the mounting bolts and the setscrew securing the drive shaft. The motor is now ready to be operated. You may now connect the control box and battery pack.

THE FINDERSCOPE

First, fit the finderscope into the tubular section of the mounting bracket; for reference, the rear of the bracket has the three adjusting screws. Tighten the screws just enough to hold the finder snugly in the bracket. Now slide the base casting of the bracket into the channeled bracket mounted on the side of the main telescope. Now tighten the setscrew securing the finder bracket, using the proper hex-wrench.

Now the finder must be adjusted so that it is aligned with the main telescope. First locate a bright star in the main telescope using a low power eyepiece. Then, simply adjust the setscrews on the finder's bracket until the same star is centered on the intersection of the crosshairs. If this proves difficult, this procedure may be done in the daytime using a reasonably distant object.

FILTERS

A set of 1¼" eyepiece filters is a good investment to increase the performance of your eyepieces when viewing the Moon and planets. This set includes: a yellow filter for better contrast in lunar features; a violet filter, which occasionally permits a few details to be seen in Venus' atmosphere; an orange filter, which aids inspection of the Martian atmosphere; a green filter, which increases contrast of Martian polar caps and dust storms; a blue filter which enhances many atmospheric formations on Jupiter; and a neutral density filter, which mainly functions to reduce the glare of a full or gibbous Moon.

Another indispensable item is an LPR filter, which blocks out the most bothersome wavelengths of light from interfering sodium and mercury vapor streetlamps. The #4 LPR filter threads directly into the barrel of all 1¼" Celestron eyepieces. This allows much greater contrast while observing emission nebulae, and to some extent, galaxies and reflective nebulae.

POLAR AXIS SCOPE

This unit mounts inside of the polar shaft of your telescope. It allows much greater accuracy in polar alignment of your instrument, in that the telescope more precisely tracks objects for both viewing and photography.

To install it, simply remove the dustcaps from the ends of the polar axis housing, insert the scope and thread it in until it is secure. The right-angle assembly, which you view through, contains a lamp to illuminate the crosshairs. Similar to the finderscope, the polar alignment scope is centered on Polaris (the North Star) for precise alignment of the telescope's polar axis, so that tracking is more accurate.

GUIDESCOPES

There are several guidescopes available to be used with the main telescope. The primary application is to keep it targeted on a guide star while photographing deep-sky objects, to ensure the main telescope doesn't drift while the exposure is being made. In addition, a guidescope used with a low-power eyepiece becomes a giant finderscope to locate fainter objects for viewing.

Adapting your Camera to the Telescope

First, the top two sections of the eyepiece tube on the focuser are removed, leaving only the short section at the bottom. The "T-Adaptor" for the C6/C125/Comet Catcher is then threaded into the focuser tube. The T-adaptor will now accept a T-ring, which is available to fit any 35mm SLR camera.

Care and Cleaning of Your Equipment

Proper covering and storage of your telescope is, as described earlier, a way to ensure protection of your instrument from the elements. However, there will always be a certain amount of dust and lint which will unavoidably get on your equipment. A soft cloth sprayed (not

soaked) with mildly soapy water can be used for general cleaning of non-optical surfaces.

For optical cleaning, a Celestron Lens cleaning kit includes everything you need for the gentle care required here. Any materials which are not specified as being exclusively for optical cleaning can and often do damage optical surfaces.

Assistance for the Telescope User

For those beginning in the adventures of amateur astronomy, many telescope users have questions about their instruments and how to use them. Celestron has a staff of well-trained people equipped to help you with any need or problem that may arise concerning your equipment and its use. Our mailing address is:

CELESTRON INTERNATIONAL
P.O. Box 3578
Torrance, CA 90503

For more urgent problems, our "User's Hotline" is:

(800) 421-1526

An authorized Celestron dealer can also be of considerable help. He too can provide assistance in use of equipment and choosing the accessories which will greatly increase the enjoyment of your telescope. Check your phone book for the phone number and/or address of the nearest dealer.

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